

**Reconfigurable Wavelength Multiplexers and Filters Employing
Micromirror Array in a Gires-Tournois Interferometer**

ABSTRACT OF THE DISCLOSURE

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10 A reconfigurable optical device capable of filtering,
multiplexing, and spectrometry, among other functions. The
device has an array of micromirrors disposed under a floating
reflector that is partially reflecting. The floating reflector
is spaced apart from the micromirrors a certain distance. The
micromirrors are each capable of independent vertical motion,
and, optionally, tilting motion. In use, light is projected at
an oblique angle into the space between the micromirrors. Each
reflection from the floating reflector produces an emergent
15 beam from the floating reflector. The emergent light beams are
combined with a lens. As a direct result of this structure,
different wavelengths are focused to different points in the
focal plane of the lens. The focal point positions of the
different wavelengths can be moved by manipulating the
micromirrors. This allows for reconfigurable filtering,
20 spectrometry, and multiplexing, among other applications.